the features of the various embodiments described herein are not mutually exclusive and can exist in various combinations and permutations, even if such combinations or permutations are not expressly made herein, without departing from the spirit and scope of the invention.

[0085] FIG. **1** depicts a cutaway side view of a multifunctional key **40** in one particular multifunctional input segment **10** of this invention. The key **40** is mounted on a plunger **30** which is in communication with a depth sensing receptacle **20**. The depth sensing receptacle detects how far the plunger has been depressed and transfers that information to a computer (not shown) which translates the depth data to the corresponding function which is then outputted, typically on a display (not shown). The plunger **30** comprises an expanded portion **31** that interacts with a series of catches **50** to provide tactile feedback to the user as to what depth the key has been depressed and thus which function is being invoked.

[0086] In panel A, no pressure has been applied to the key **40** and the expanded portion of the plunger **31** is not in contact with the catches **50**. In panel B, the key has been depressed to a level corresponding to the first function. The expanded portion **31** of the plunger has entered the first catch and the depth of the plunger causes the depth sensing detector to output a first signal **12** to a computer. In panel C, the key has been depressed to a level corresponding to the second function. The expanded portion **31** of the plunger has entered the second catch, which provides the user with the haptic feedback of two clicks as the expanded portion of the plunger stops in the first catch and then the second. The depth of the plunger causes the depth sensing detector to output a second signal **13** to a computer. In panel D, the key has been depressed to a level corresponding to the third function, providing a third click felt by the user. The expanded portion **31** of the plunger has entered the third catch and the depth of the plunger causes the depth sensing detector to output a third signal **14** to a computer.

[0087] FIG. **2** depicts a input device **10** comprising input segments **40** and a display **41** adjacent each input segment that changes according to the force of pressure on the segment, displaying the output to be triggered by that force of pressure. In panel A, the first input segment **40** is capable of outputting the number 4, the letter G and the letter H. The display **41** shows the number 4, when no pressure is being applied to that segment indicating that this is the first function that will be invoked by applying force of pressure on input segment **40**. In panel B, the user has increased the force of pressure on the segment with a finger **60** to invoke the output of the letter G, the corresponding output is displayed on the display **42** associated with the segment. In panel C, the user has further increased the force of pressure on the segment with a finger **60** to invoke the output of the letter H. Again, a corresponding output is displayed on the display **43** associated with the segment.

[0088] FIG. **3** is a laptop computer comprising a display **15** and a touch-sensitive input device **25**. The touch-sensitive input device is also a display showing an image of a keyboard **45** and an image of a mouse touchpad **70**. The keyboard image **45** comprises a plurality of multifunctional input segments that are displayed as keys **40**. The image of the touchpad **70** comprises two displayed buttons **71** and **72** and a touchpad segment **73**. Each of the key images **40**, the mouse buttons **71** and **72**, and the touchpad **73** is a multifunctional segment capable of two or more outputs depending on the force of pressure applied to that segment. A pressure-sensing device (not shown) underlies each of the multifunctional segments and transmits the force of pressure to a cpu (not shown), which translates that information into output on the display **15**.

[0089] A character map showing the various functions for each of the key-image multifunctional input segments of the input device of FIG. **3** and the level of force of pressure required to invoke that function is shown in FIG. **8**.

[0090] FIG. **4** depicts an input device **90** comprising a touch screen having multifunctional segments corresponding to the keys on a phone. Panel A is a cutaway side view of the phone. The touch screen **25** is underlayed by a series of pressure sensors **20** that surround a central solenoid **80**. The solenoid **80** provides haptic feedback to the user corresponding the force of pressure detected by the pressure sensor **20**. The touch screen **25** is sufficiently deformable (such as a LCD) for the movement of the solenoid **80** to be felt by the user's finger. The solenoid **80** has a first position **81** where it does not cause any deformity in the touch screen **25**. When the pressure sensor **20** detects a force of pressure corresponding to the triggering of the first function of the multifunctional segment it transmits a signal to the solenoid causing it to move for a period of time to a second position **82** where it presses into the touch screen **25** causing a slight deformity **27** that is detectable by the user and then return to the first position **81**. Forces of pressure corresponding to second, third or fourth functions cause the pressure sensor **20** to transmit a signal to the solenoid to cycle from the first position to the second position and back to the first position two, three or four times, respectively. Thus, the user feels one, two, three or four thumps underneath his finger corresponding to the function to be outputted.

[0091] Panel B is a top view of the input device **90**. The touch screen **25** displays multifunctional segments corresponding to keys **40** with a display **44** of the functions that can be outputted by each segment. The touch screen surface has been peeled away on the upper left input segment to show the orientation of the touch sensor **20** surrounding the central solenoid **80**.

[0092] It should be understood that the single solenoid **80** could be replaced by a series of pins or other movable devices to achieve the same purpose. Moreover, the pattern of movement of the solenoid **80** from a first position to a second position and back to the first position can be altered in duration, force and different patterns to provide the user with haptic differentiation of the functions being triggered

[0093] A character map showing the various functions for each of the keys of the input device of FIG. **4** and the level of force of pressure required to invoke that function is shown in FIG. **7**.

[0094] FIG. **5** is a graph of depth of key depression versus force required for a multifunctional keyboard of this invention. Additional force is required to depress the key to pass the interface of two functions. That additional force provides haptic feedback to the user informing him that the next function has been triggered. That additional force applied at the interface may also be accompanied by additional haptic feedback, such as a click, to further alert the user that the next function has been triggered.

[0095] FIG. **6** depicts a mouse **100** of the present invention. The mouse **100** comprises two multifunctional buttons **101** and a multifunctional roller **102**. The buttons are underplayed by pressure sensors (not shown) and the roller is connected to another pressure sensor (not shown). The various functions controlled by the roller **102** are triggered by the force of